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SURF Communication Solutions

Orion-MCU™ User Manual

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1. About This Manual

This manual provides detailed guidance on version 2.1 of the Orion-MCU™. It includes a description of the product, its functionality, features, configuration, and operation.

This document includes the following sections:

Section 1: About This Manual – This section.

Section 2: Introduction – This section provides an introduction to the functionality and capabilities of Orion-MCU™.

Section 3: Topologies – This section covers the network topologies available when using Orion-MCU™.

Section 4: Physical Overview – This section provides a physical description of the product, including physical connectivity.

Section 5: Getting Started – This section provides detailed information about how to get started with the product, including unpacking the system and connecting it to your network.

Section 6: Administration and Configuration – This sections provides information on the administration and the configuration of Orion-MCU™ via the web-based management system's GUI.

Section 7: Conferences – This section provides information on how to create and configure a conference.

Section 8: Leader Dashboard – This section describes the Leader Dashboard feature, enabling a conference leader to control the conference.

Section 9: Serial Connectivity – This section provides information on serial connectivity with Orion-MCU™, for purposes of troubleshooting.

Appendix-A – Precautions and Safety

Appendix-B – Rack Mounting

Appendix-C – Technical Specification

Feedback:

The SURF Technical Support Center is at your service. You may access Warranty Service through our Web Request Form by using the following link: support@surfsolutions.com

We are committed to constant and never-ending improvement. Your input will greatly help us in our endeavor.

2. Introduction

2.1 Functionality

Orion-MCU™ provides SIP-based video/audio conferencing services for SMBs and enterprises. The product is a ready-to-use, stand-alone network appliance. The Orion-MCU™'s web-based management system offers easy system configuration, conference creation, monitoring and conference control in real time.

2.2 Main Capabilities

Orion-MCU™ offers the following major capabilities:

- **SIP based:** Orion-MCU™ is a SIP-based conferencing system.
- **HD conferencing:** Orion offers wideband HD voice and HD video in resolutions of up to 720p.
- **Mixing:** A variety of conferencing devices are bridged by Orion's advanced audio/video mixing and adapting capabilities. Participants receive video and audio streams that are adapted to their device's media characteristics - codecs, rates, frame size and resolution.
- Video/voice characteristics:

  Voice codecs: G711a, G711u, G729, G722.1, iLBC, G723

  Video codecs: MPEG4, H263, H264

  Video resolution: Up to 720p
- **Conference Management:** Conferences can be managed by a leader, or set as automated ad-hoc conference rooms.
- **Leader Dashboard:** The Orion-MCU™ "Leader Dashboard", enables conference leaders to manage the conference. Upon logging into the "Leader Dashboard", the leader can invite participants, modify conference parameters (mute, set dominant speaker, etc), and revoke/disconnect participants from the conference and view conference information.
- **Configurable Meeting Rooms:** Meeting rooms (not scheduled conferences) can be provisioned and established, and once established, used at any time.
- **Multiple Access Numbers:** Orion-MCU™ supports multiple access numbers. The Orion-MCU™'s access numbers are pre-provisioned, and are dialed by conference participants directly or indirectly via their serving IP-PBX.
- **Multiple Video Layout Options:** 10 video dynamic layouts are available for equal-presence display and 5 for dominant-based display. The layouts are modified automatically, when a participant enters or leaves the conference.
- **VIP Participants:** Orion-MCU™ allows VIP participants to join a conference without PIN code authentication.

- **Registration:** Orion-MCU™ is provisioned for registration as a SIP endpoint in the network. An authentication option is provisioned for each registration process. SIP clients may register to Orion-MCU™'s built-in SIP registrar.

3. Topologies

This section describes the network topologies supported by Orion-MCU™.

3.1 Topology-1 - Orion-MCU™ via SIP PBX

In the following topology, the participants' connectivity with Orion-MCU™ is via the IP-PBX which provides SIP registrar services to the users. In order to enhance existing services for multimedia conferencing, the IP-PBX interacts with the Orion-MCU™ system using SIP. Prior to conferencing service creation, the network and the system are provisioned using Orion's web management system.

Orion-MCU via SIP PBX

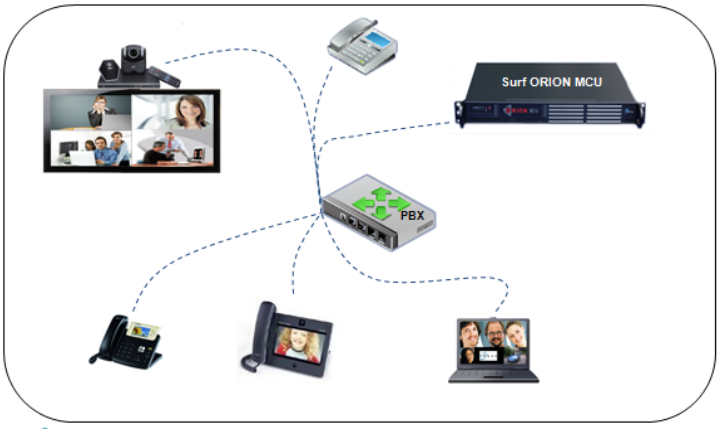


Figure 3-1- Topology-1 - Orion-MCU™ via SIP PBX

1. All SIP endpoints at the enterprise register to the IP PBX.
2. The IP-PBX supports SIP Signaling
3. The Orion-MCU™ registers, or is configured as a trunk at the PBX.
4. Orion-MCU™ provides Mixing/Bridging/Switching and signaling interoperability.
5. Voice-only end-points can also connect to the bridge.

3.2 Topology-2 - Orion-MCU™ via PBX and Direct Connectivity

This topology shows the connectivity to Orion-MCU™ end points either through the IP-PBX or directly to the Orion-MCU™.

Orion-MCU via PBX and Direct Connectivity

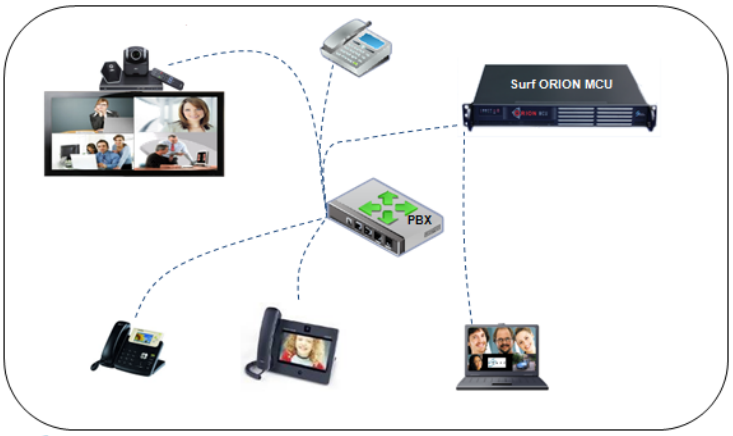


Figure 3-2- Topology-2 - Orion-MCU™ via PBX and Direct Connectivity

1. SIP endpoints are registered on Orion-MCU internal SIP registrar or PBX.
2. The IP-PBX supports SIP Signaling
3. The Orion-MCU™ also registers, or is configured as a trunk at the PBX.
4. SIP endpoints can call through the PBX, Orion-MCU™ registrar or directly to the Orion-MCU™
5. Orion-MCU™ provides Mixing/Bridging/Switching and signaling interoperability.
6. SIP endpoints can also connect directly using direct IP dialing.
7. Voice-only clients can also participate in a video conference, making it a mixed Voice/Video conference.

3.3 Topology-3 - Direct Interaction with Orion-MCU™

In this topology, the participants interact directly with the Orion-MCU™, via SIP, to set and initiate a conferencing session. The participants' PIN numbers and access codes are pre-provisioned through Orion's web-based management system.

Direct Interaction with Orion-MCU

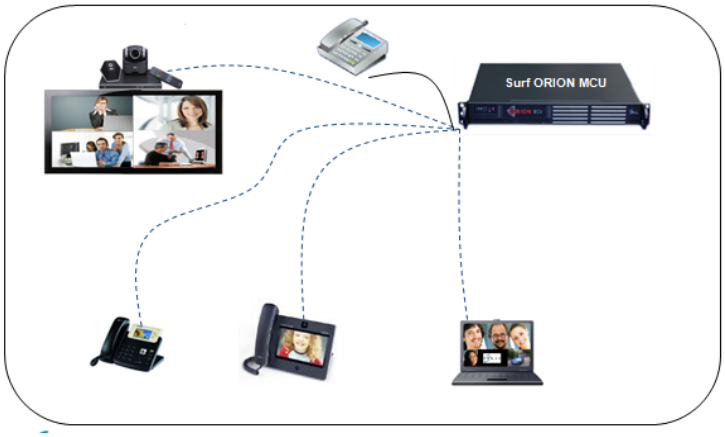


Figure 3-3- Topology-3 - Direct Interaction with Orion-MCU™

1. Endpoints may be registered on Orion-MCU SIP registrar.
2. All SIP endpoints can call directly to the Orion-MCU™ via a direct IP call.
3. Orion-MCU™ provides Mixing/Bridging/Switching and signaling interoperability.
4. Voice-only endpoints can also participate in a video conference, making it a mixed Voice/Video conference.

3.4 Topology-4 - Connectivity with External Networks

This topology shows the connectivity between conference participants's on enterprise network and participants on public networks through Orion-MCU™.

Connectivity with External Networks

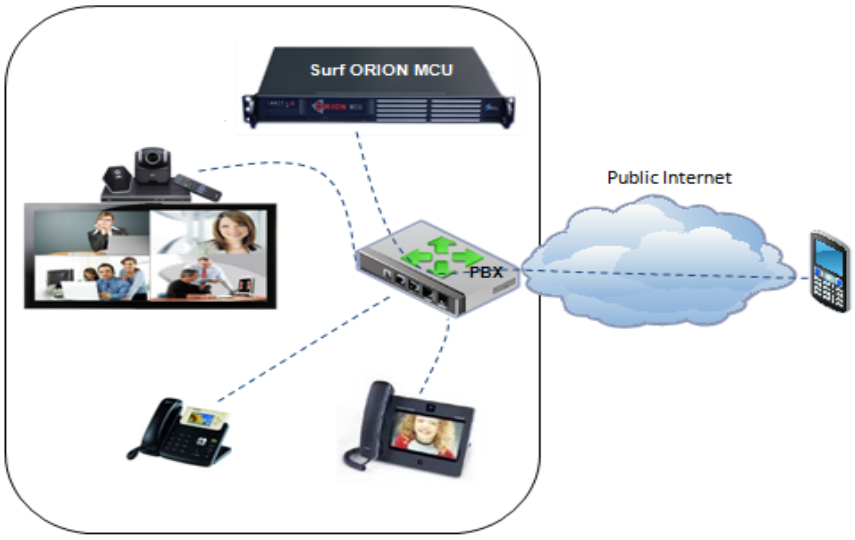


Figure 3-4- Topology-4 - Connectivity with External Networks

1. All SIP Endpoints at the enterprise register to the IP PBX.
2. The IP-PBX supports SIP Signaling.
3. The Orion-MCU™ also registers, or is configured as a trunk at the PBX.
4. Endpoints can also connect via the external network.
5. Orion-MCU™ provides Mixing/Bridging/Switching and signaling interoperability.

4. Physical Overview

4.1 Description

The following figure shows the front view of Orion-MCU™:

Figure 4-1- Front view of the Orion-MCU™

The Orion-MCU™ is available in 2 configurations, supporting both small and large enterprises:

Orion-MCU™ 1286 – Orion-MCU™ 1286 is a small-to-medium enterprise based video/voice conferencing system. Concurrently the system supports up to 2 CIF conferences, or 1 VGA or HD conference, with up to 25 participants (between 5-10 viewable at each time depending on the resolution) . The system can also support up to 11 concurrent voice conferences.

Orion-MCU™ 4286 – Orion-MCU™ 4286 is a medium-to-large enterprise video/voice conferencing system. Concurrently the system supports up to 8 CIF conferences, or 4 VGA or HD conferences, with up to 25 participants (between 5-10 viewable at each time depending on the resolution). The system can also support up to 20 concurrent voice conferences.

4.2 System Physical Interface

The system interface of Orion-MCU™ includes control panel buttons, LEDs and I/O ports.

4.2.1 Control Panel Buttons

There are two push buttons located at the front of the chassis: a reset button and a power on/off button.

Reset- The Reset button reboots the system.

Power- The Power button is used to turn on and turn off the system. Turning off the system eliminates the main power but maintains standby power. In order to service the system, the server should be shut down and the AC power cord should be unplugged.

4.2.2 Control Panel LEDs

The five control panel LEDs are located at the front of the chassis and provide information related to different parts of the system.

Overheat- When this LED is on, it indicates an overheat condition, which may be caused by an obstruction to the airflow or because the room temperature is too high. Check the airflow to the unit. This LED will remain on as long as the indicated condition exists.

NIC2- Indicates network activity on LAN2 when flashing .

NIC1- Indicates network activity on LAN1 when flashing.

HDD- Indicates drive activity when flashing.

Power- Indicates power is being supplied to the system. This LED is illuminated when the system is operating.

4.2.3 I/O Ports

The I/O ports of Orion-MCU™ appear at the rear part of the chassis.

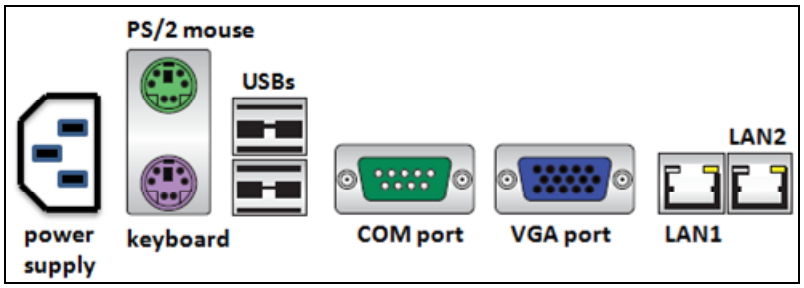


Figure 4-2- I/O ports

5. Getting Started

Step 1: Follow the precautionary instructions

Follow the precautions and system safety instructions as listed in Appendix A of this User Manual. Choose a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. If you intend to install the system on a rack, choose a location near a grounded power outlet, and follow the instructions in Appendix B of this User Manual.

Step 2: Unpack your Orion-MCU™ system

Step 3: Connect the cables

Connect the cables to your Orion-MCU system:

1. Connect the supplied, short CAT-6 cable in a loop as shown the image below.
2. Connect the Orion-MCU to the "LAN" port of your computer using a CAT-5/6 cable (as shown below).
3. Connect the Power Cable first to the Orion-MCU™ and then to the power outlet. Press the power button located on the front panel of the Orion-MCU™ to turn on the power. (Boot time is approximately 5 minutes)

Figure 5-1- Cable connections

Step 4: Apply the static IP address "192.168.0.2" to your computer

Change your computer's network settings and apply the following static IP address: "**192.168.0.2**".

Step 5: Change Orion-MCU™'s IP address

Orion-MCU™ is provided with a default IP address "**192.168.0.1**" that should be modified before using the system.

To change the IP address:

1 In a web browser, navigate to the default IP address - 192.168.0.1 and upon the appearance of the login screen, enter the default user name and password (admin, admin).

2. Select **System Settings > Network Settings**.

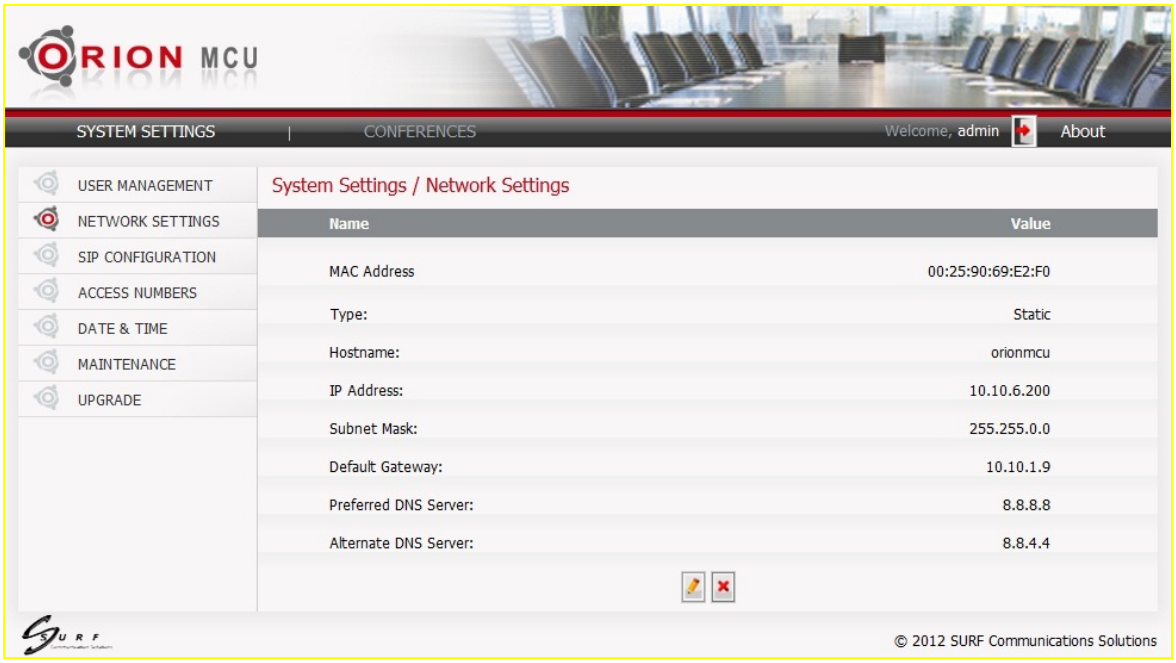
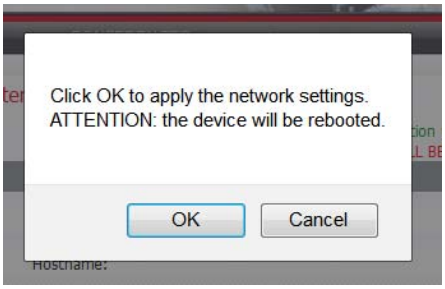


Figure 5-2- Network Settings window

4. Click Edit and then modify the IP Address field.

5. Click Save . A confirmation message appears.



6. Click OK. The system reboots and the changes are applied.

** If DHCP was chosen, the simplest way to see the Orion-MCU™ IP Address is to connect a monitor and restart the machine. The IP Address will appear in the Login Screen at the end of the system load.*

Step 6: Connect to the Orion IP Address from your Network

Restore the original network configuration on your computer, and connect the Orion-MCU™ to your network.

Connect to the Orion-MCU™ Management GUI by entering the Orion-MCU™'s IP address in a web browser.

The Orion-MCU™ is now connected to your network

6. Administration and Configuration

6.1 Overview

Administration and configuration of Orion-MCU™ are provided through the web based GUI.

After setting up the system, and prior to conference-service creation, the system needs to be configured according to the steps described in this section.

6.2 Login

After entering the Orion-MCU™'s IP address in your web browser, a login screen appears. Enter the default user name and password (**admin, admin**).

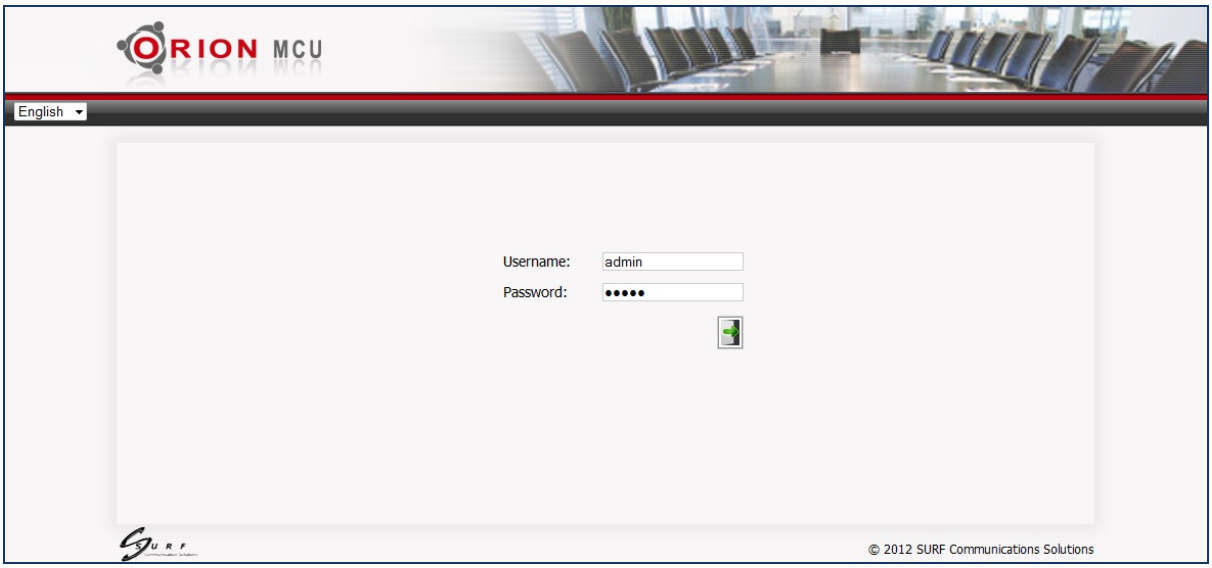


Figure 6-1- Login screen

Note: It is recommended to change the default admin password, before starting to use the system.

Note: The user can choose a language from the system's pre-defined languages by using the drop down menu on the top-left side of the screen.

6.3 Main Menu

The main menu appears when the user has logged in. The main menu is divided into two major categories:

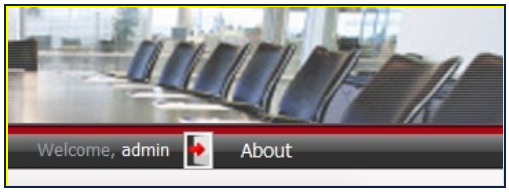
a) System Settings

b) Conferences

Prior to conference creation, system settings must be configured.

Figure 6-2- Main Menu

Note: To log out, click the logout icon (red), located on the top-right side of the screen



Note: To view information about the system, click “About”, on the top-right of the screen.

6.4 User Management

User Management is the first category under System Settings, on the main screen. The User Management screen allows the administrator to create a new user, update existing user information, or remove a user from the system.

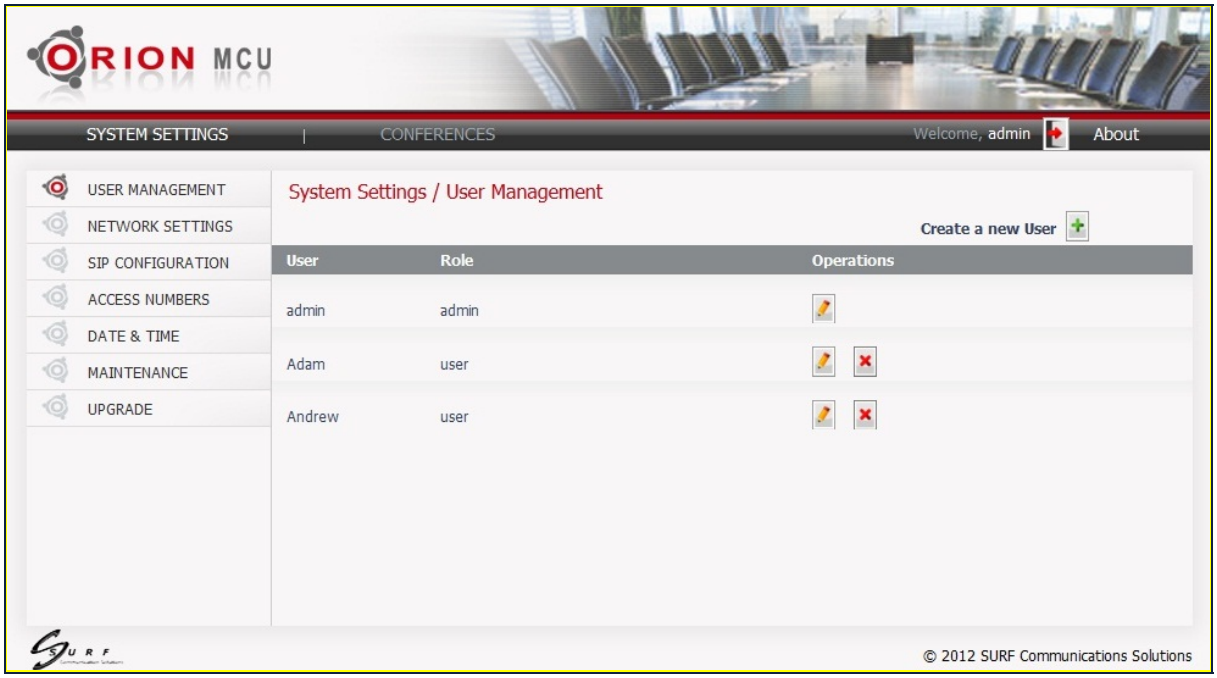


Figure 6-3- User Management

The **User** field lists user names. The **Role** field displays the capabilities of the user in the system. The Role can be either "**admin"** or "**user":**

- The "admin" role permits access to all the system capabilities.
- The "user" role enables only conference creation, viewing, and modification of conference information.

6.4.1 Creating a New User

To create a new user:

1. In the System Settings/User Management window, click **Create a new User** .

   The Create a new User window opens.

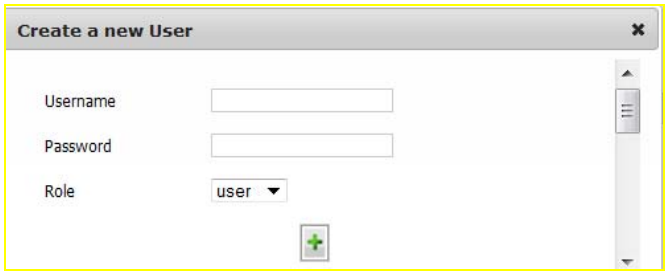


Figure 6-4- Create a New User Window

2. Create a **Username** and a **Password**.
3. Select a **Role** for the user.
4. Click to add the new information to the system.

6.4.2 Modifying User Information

To modify user information:

1. In the System Settings/User Management window, click Edit in the Operations column of the user to be edited.

   The Edit User window opens.

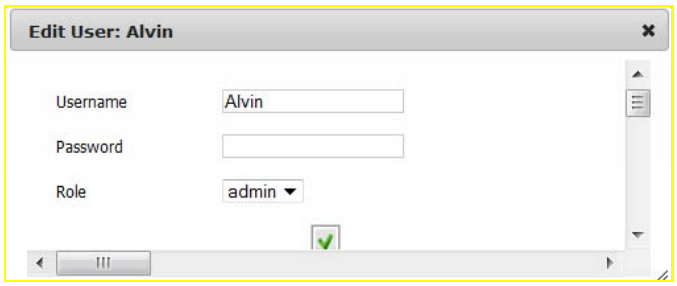


Figure 6-5- Edit User Window

2. Modify the information as needed and click **Save**.

6.4.3 Deleting a User

To delete a user from the system:

- In the System Settings/User Management window, click **Delete** in the Operations column of the user to be removed.

6.5 System Parameter Settings

Before creating a conference, the network and SIP parameters must be provisioned.

6.5.1 Configuring Network Settings

Network settings are configured in the Network Settings window.

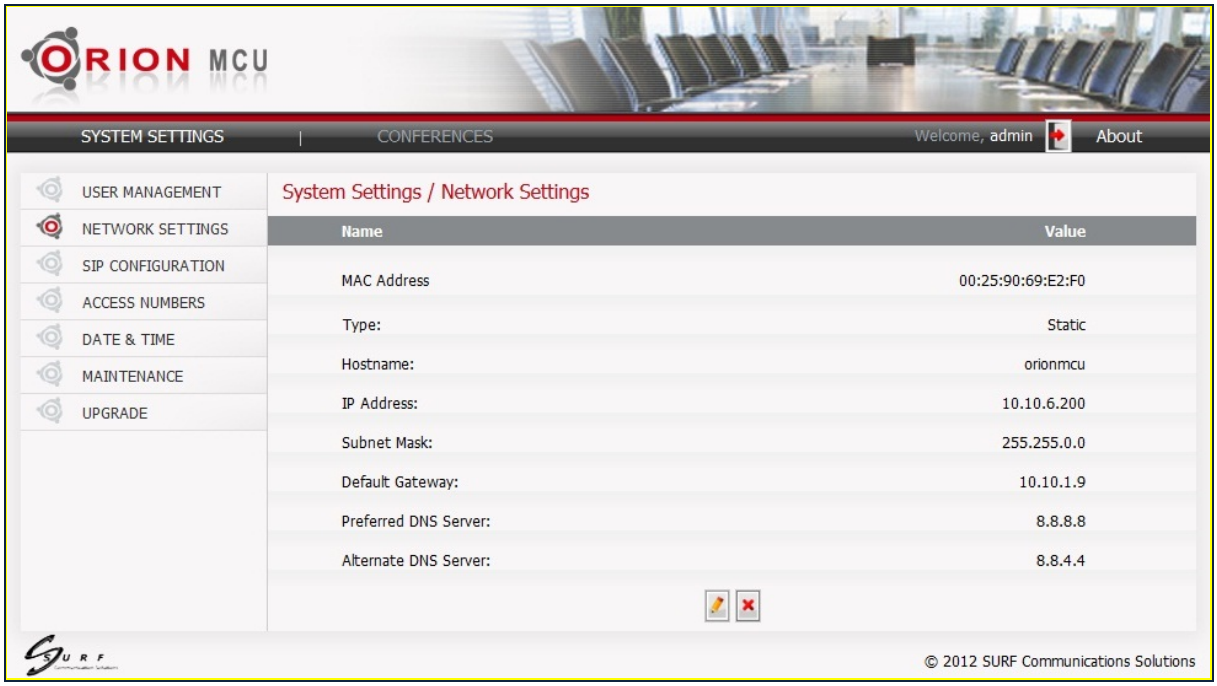


Figure 6-6- Network settings screen-1

To configure network settings:

1. Select **System Settings > Network Settings**.
2. Click **Edit** . Network parameters become editable.

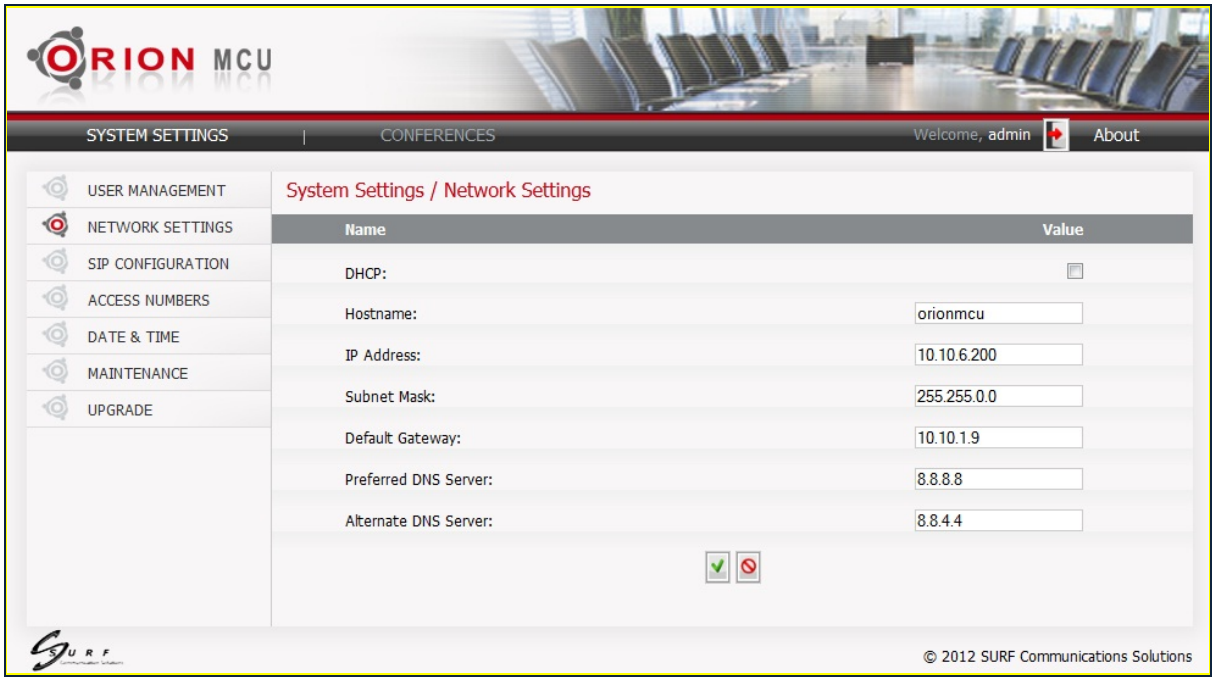


Figure 6-7- Editing the network settings

Note: If the “DHCP” parameter is selected, then only the Hostname parameter can be edited. All other network parameters are greyed out.

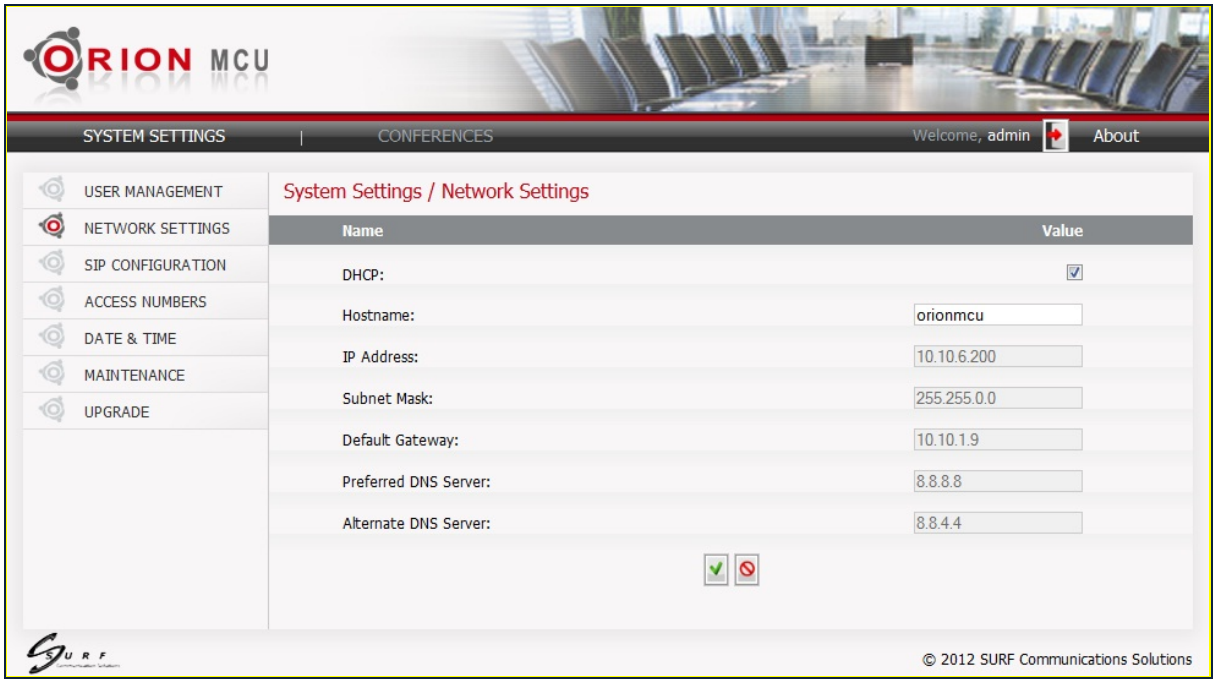


Figure 6-8 - Network setting screen-2

3. Edit the network parameters, as needed, according to the following table:

Parameter	Definition	Description
MAC Address	MAC address	Read only
Hostname	String	The name of the Orion-MCU™ system in your network
IP Address	IP address	The Orion-MCU™ system's IP Address
Subnet Mask	Net-mask	The Orion-MCU™ system's subnet mask
Default Gateway	IP address	The IP Address of the default gateway
Preferred DNS Server	IP address	The IP Address of the preferred DNS Server
Alternate DNS Server	IP address	The IP Address of the alternate DNS Server

Table 6-1: Network settings table

4. To revert to the previous value in a field, click **Revert** .

5. Click **Save** to save the configuration.

   A message appears, requesting confirmation to restart the system. The changes are applied after the restart is completed.

6.5.2 Configuring SIP Settings

SIP settings are configured in the SIP Configuration window.

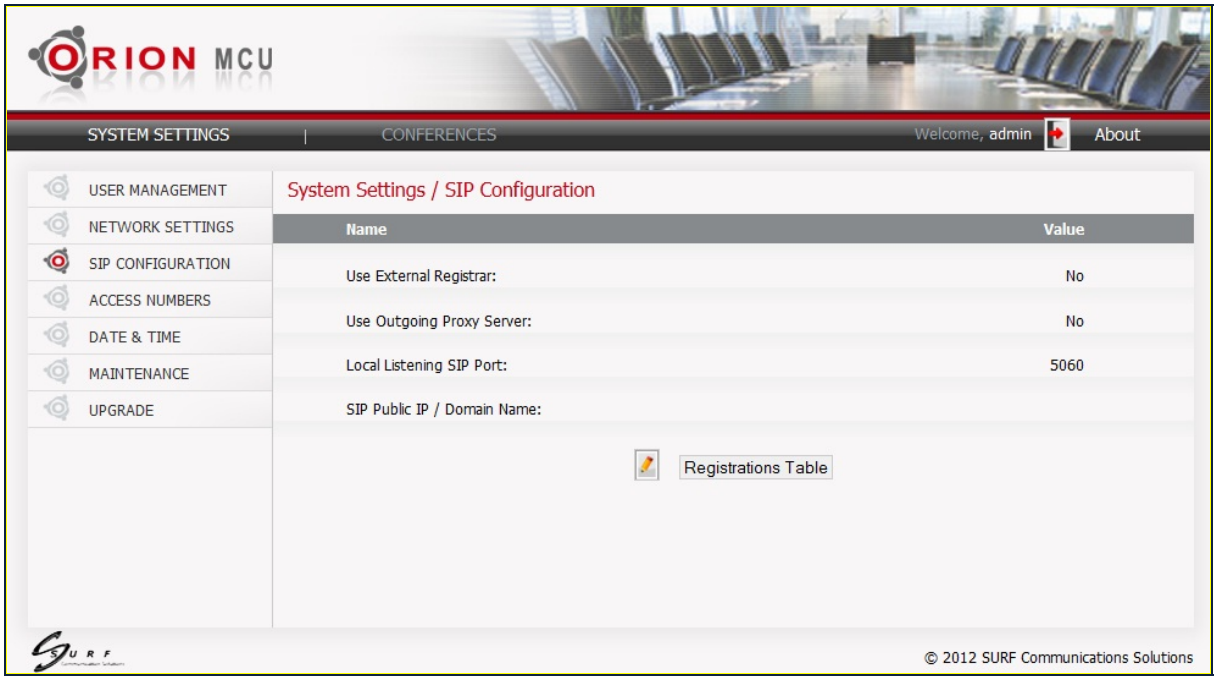


Figure 6-9- SIP configuration

To configure SIP Settings:

1. Select **System Settings > SIP Configuration**.
2. Click **Edit** . SIP settings become editable.

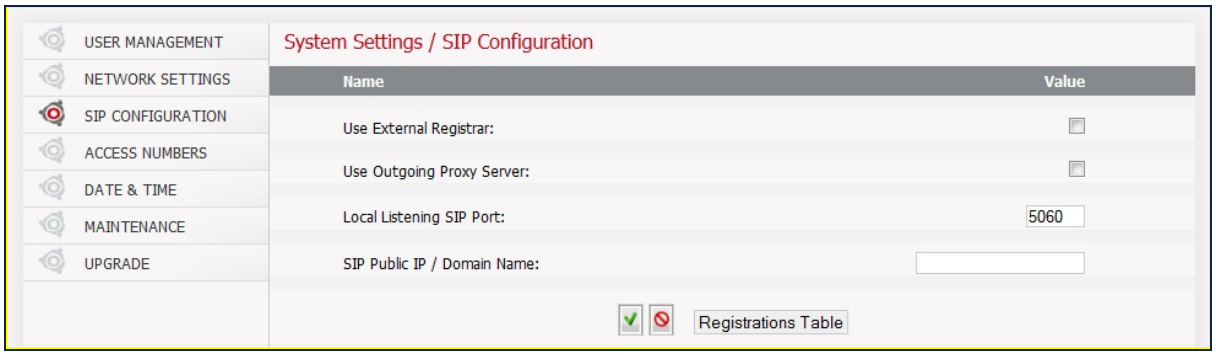


Figure 6-10- Editing SIP Parameters

When all check boxes are selected, the full list of configurable parameters displays as follows:

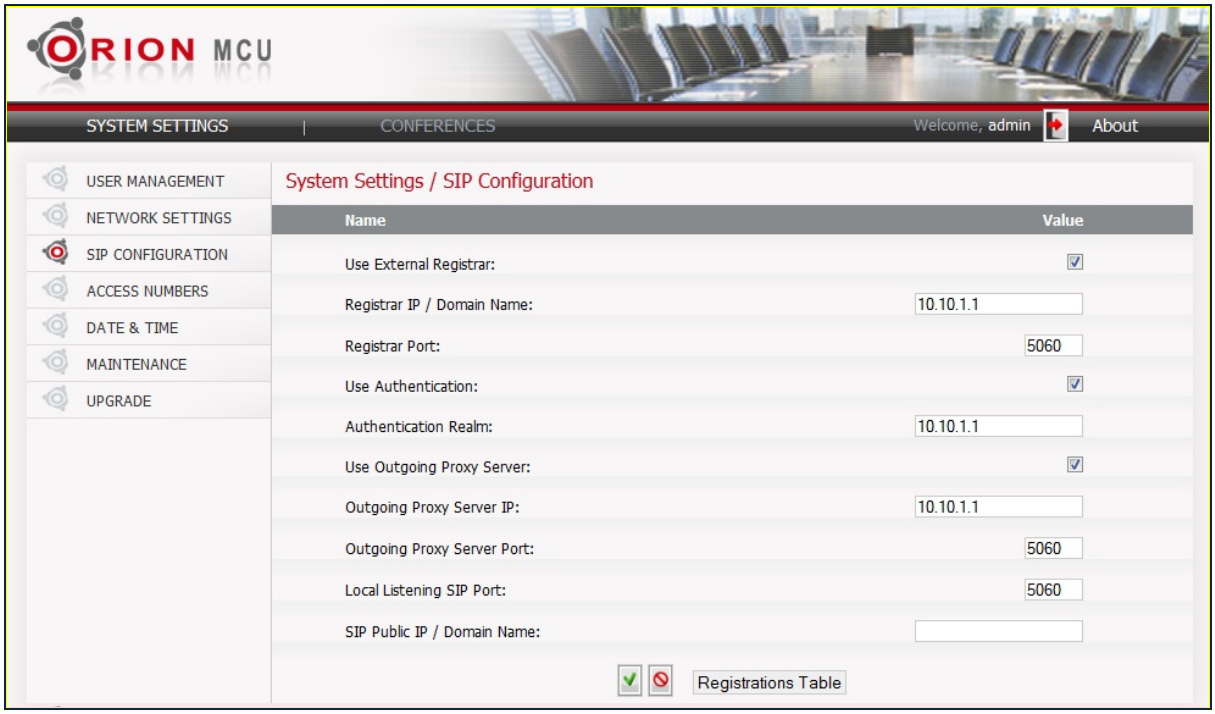


Figure 6-11- All SIP parameters

3. Edit the SIP settings, as needed, according to the following table:

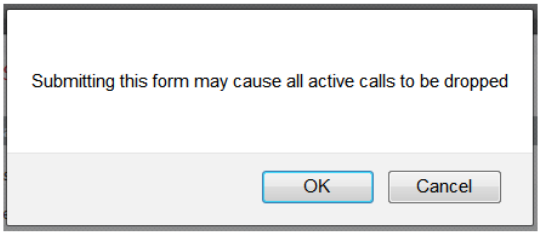
Parameter	Values	Description
Use External Registrar	Check-box (Yes/No)	If an external registrar is configured, Orion-MCU™ registers to the registrar. Orion-MCU may also be used as a SIP registrar for SIP clients.
Registrar IP/ Domain Name	IP address	The external registrar IP address or domain name
Registrar Port	Port	The external registrar SIP port
Use Authentication	Check-box (Yes/No)	Indicates whether the registration requires authentication.
Authentication Realm	String	Authentication realm.
Use Outgoing Proxy Server	Check-box (Yes/No)	States whether a proxy server is used
Outgoing Proxy Server IP	IP address	The Outgoing proxy SIP IP address.
Outgoing Proxy Server Port	Port	The Outgoing proxy SIP port
Local Listening SIP Port	Port	This is Orion-MCU's Local listening SIP port
SIP Public IP / Domain Name	IP address	Not in use in this release

Table 6-2: SIP settings table

4. To revert to the previous value in a field, click “cancel” .

5. Click **Save** to save the configuration.

   If “Local Listening SIP Port” parameter is changed, then all the active calls will be dropped and the application will restart. In this case user’s confirmation is required:



6. Click **OK**.

   The application restarts.

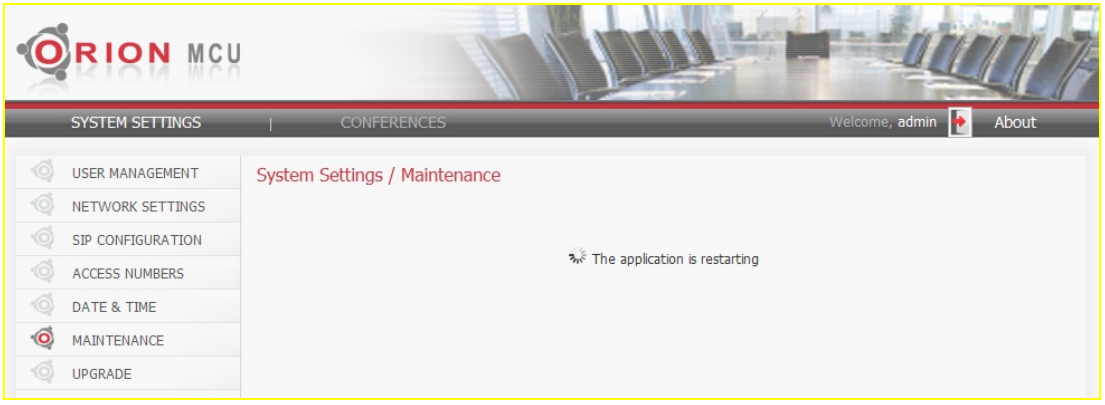


Figure 6-12- Restart after modifying SIP configuration

6.5.3 Viewing Active Registrations

You can view all the active registrations to the Orion-MCU in the SIP Configuration window.

To view active registrations:

- Click the **Registrations Table** button.

Figure 6-13- Registrations Table Window

6.5.4 Configuring Access Numbers

An access number is a number which a participant dials to join a conference. However, access numbers are not mandatory, since a participant can also join a conference by entering a conference number.

A single Orion-MCU™ supports multiple access numbers. The access numbers are provisioned via the Orion-MCU™ GUI, as shown in this section. If the number dialed by a participant does not match any of the provisioned access numbers (or conference numbers), the call is declined.

To configure access numbers:

1. Select **System Settings > Access Numbers**.

   The Access Numbers window opens:

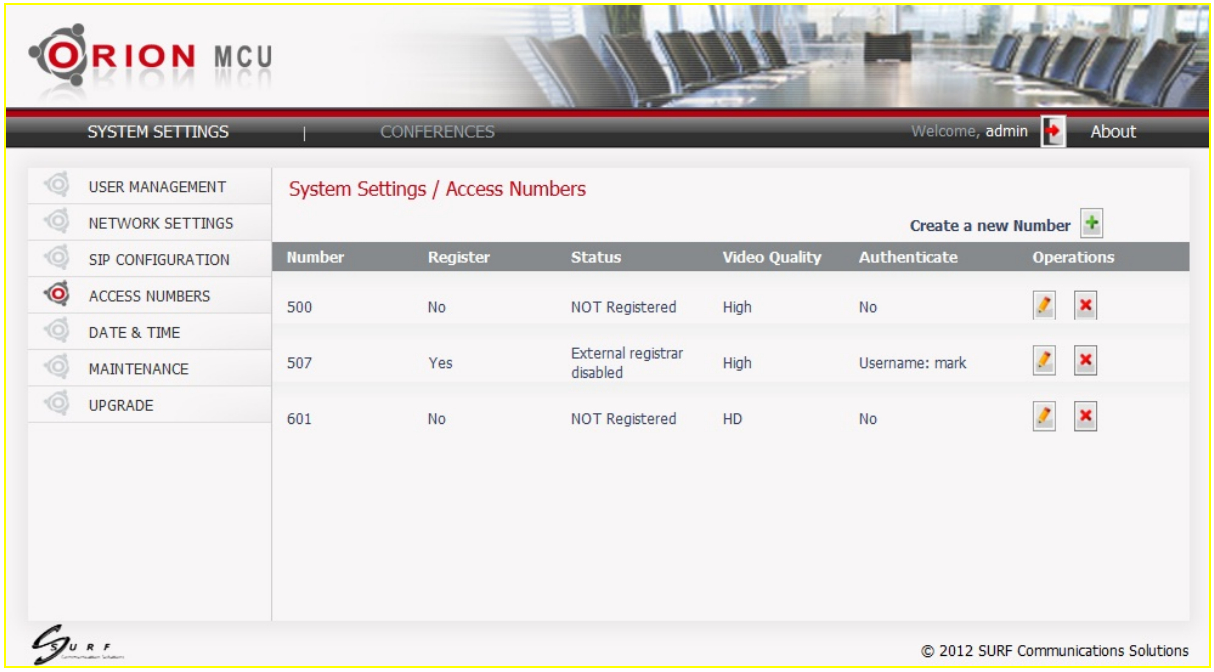


Figure 6-14- Access number provisioning

2. Click Create a new Number .

   The Create a new Number window opens.

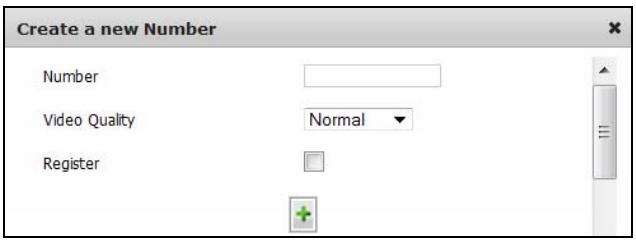


Figure 6-15- Create a New Number Window

3. In the **Number** field, type the new access number.
4. In the **Video Quality** field, select one of the following:
   - Voice Only

- Normal: CIF (352X288)
- High: VGA (640x480)
- HD (1280x720)

5. Do one of the following:
   - To register the access number, continue with the next step.
   - To complete the configuration procedure, click **Save** .
6. To register the access number to the registrar, select **Register**.

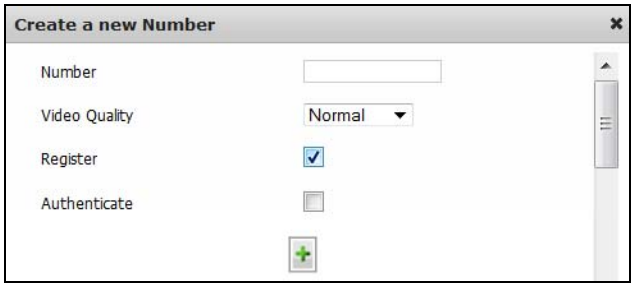


Figure 6-16- Registering a Number

The Authenticate option appears.

7. To authenticate the registration, select **Authenticate**.

   The Username and Password options appear.

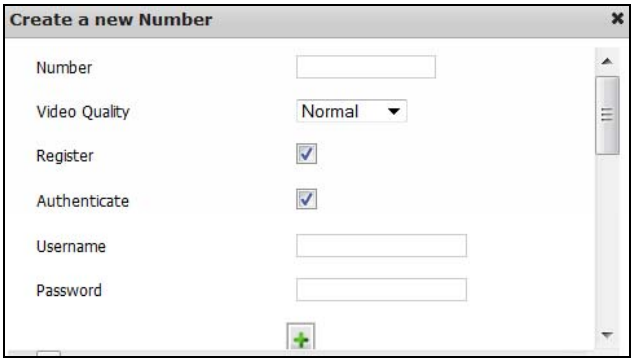


Figure 6-17- Authenticating a Number

8. Type a **Username** and **Password**.
9. Click **Save** to save the configuration.

To edit the parameters of an existing access number:

1. In the Access Numbers window, click in the Operations column of the number to be edited.

   The Edit Access Number window opens.

2. Modify the settings as needed and click **Save** .

To delete an access number from the list:

- In the Access Numbers window, click in the Operations column of the number to be deleted.

6.5.5 Date and Time

The date, time and time zone can be set manually, or an NTP server can be used to correct manual settings.

To set the date and time:

1. Select **System Settings > Date & Time**.

   The Date & Time window opens.

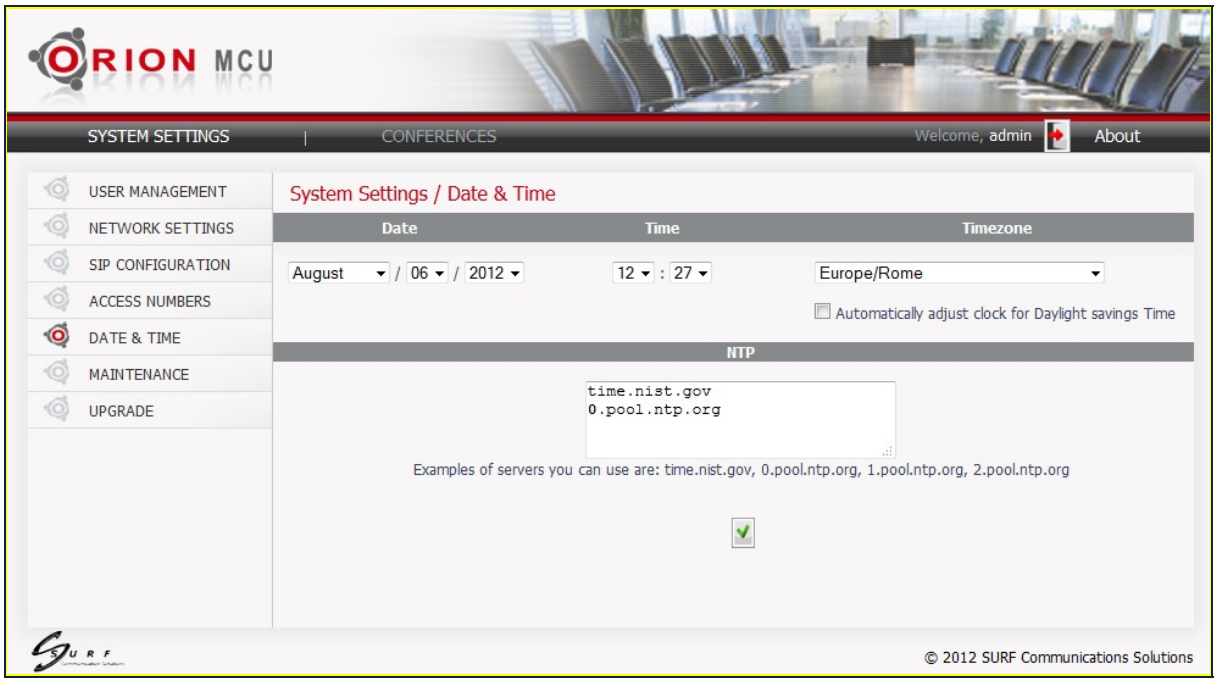


Figure 6-18- Date and Time Screen

2. Select the current **Date**.
3. Select the current **Time**.
4. Select the relevant **Timezone**.
5. To automatically adjust the time for daylight savings time, select **Automatically adjust clock for Daylight savings Time**.
6. To have an NTP server sync the Orion MCU with other devices on the network, select a server from the **NTP** list.

   If more than one NTP server appears in the list, the first server in the list has the highest priority.

7. Click **Save** .

6.6 Maintenance

The following maintenance actions can be performed:

- **View System Status** - Provides the status of system components, and general system information including CPU usage, free, and total memory.
- **Restart the Application** - The software application restarts and all ongoing sessions are dropped.
- **Hardware Reset** – Reboots hardware. This process is a longer process, taking around 3 minutes. It is recommended to log out and re-log into the system after a Hardware Reset.
- **Orion-MCU™ Shutdown –** Enables graceful system shut-down. When shut-down, the server will completely power off
- **Start Diagnostic Trace –** System events are collected during a specified interval and saved, creating a trace file for advanced diagnostics. For more information, please refer to 6.6.1 below.

To perform system maintenance:

1. Select **System Settings > Maintenance**. The Maintenance window opens.

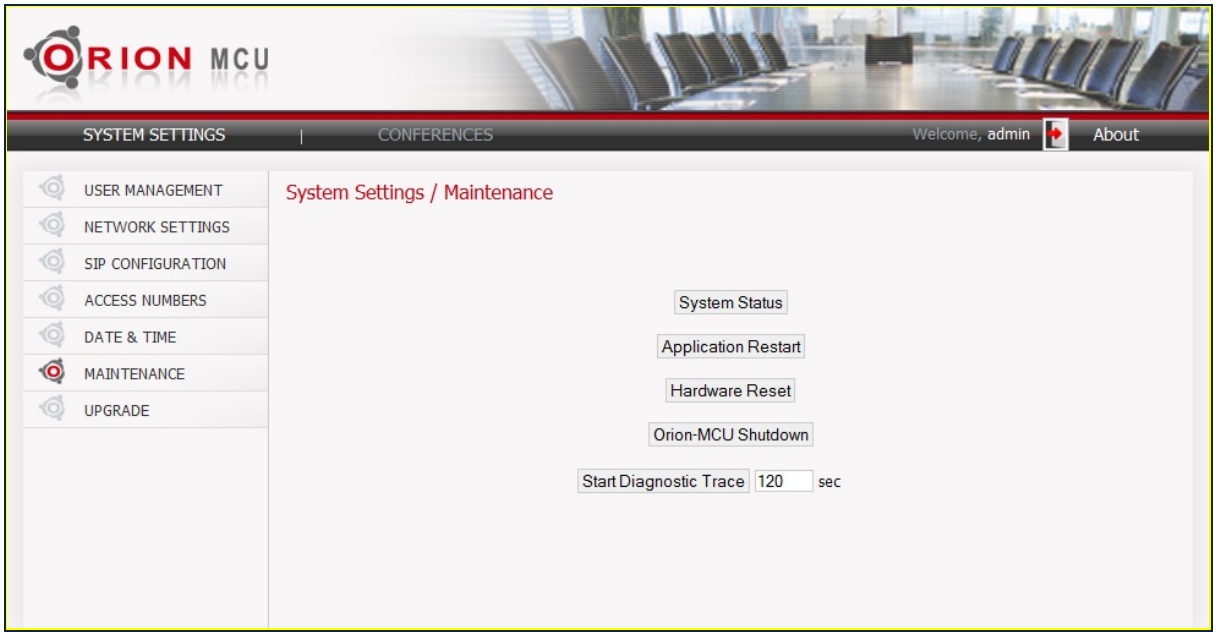


Figure 6-19- Maintenance window

2. Click a button to perform the action specified.

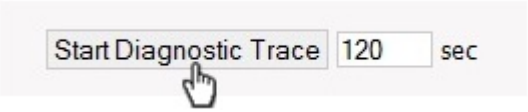
For additional maintenance operations and troubleshooting, an emergency menu can be accessed using serial connectivity. For further information, see Serial Connectivity.

6.6.1 Start Diagnostic Trace

To provide diagnostic trace:

1. Select **System Settings > Maintenance**. The Maintenance window opens.

2. Click on **Start Diagnostic Trace**
3. Enter the interval for information collection in the text-box. The allowed range is between "0" to "300" seconds.



If "0" is entered, the system provides a file, which contains all the system logs. Otherwise the information saved includes more detailed information.

4. A diagnostic file (zip file) is created. Click "Save Diagnostic Trace" to save the file.

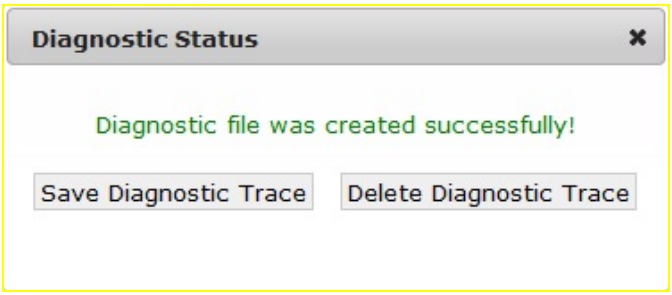
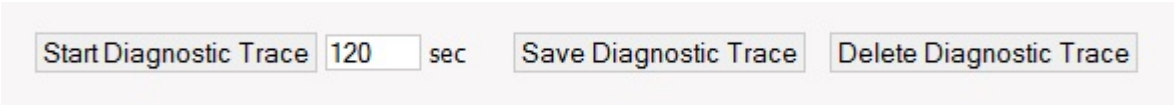


Figure 6-20- Diagnostic Dialog Box

5. After saving the file, "Delete Diagnostic Trace", appears on the main "Maintenamce" screen, allowing the user to delete the file.

   Only one trace file is allowed. To provide a new trace file, the existing file must be deleted.



6.7 Upgrade

The system can be upgraded as software upgrades become available. The software is first downloaded and the upgrade applied. After the upgrade, the system must be rebooted.

To upgrade the system:

1. Select **System Settings > Upgrade**.

   The Upgrade window opens:

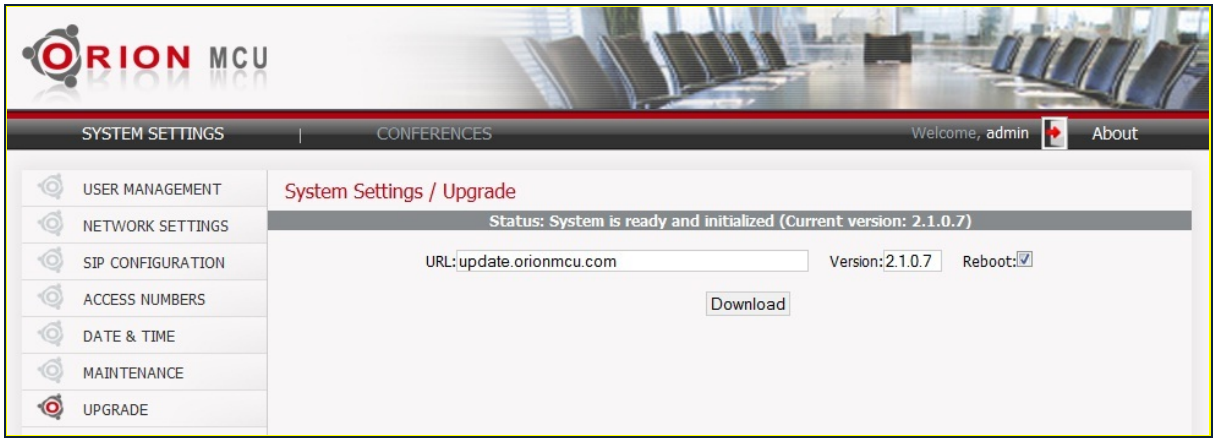


Figure 6-21– Upgrade window

2. In URL, type the address of the Orion-MCU™ upgrade server: **update.orionmcu.com.** If DNS has not been configured (see "Network Settings" section 6.5.1 above), please use its IP address: **23.23.229.203**.
3. In **Version**, type the version number to be downloaded.
4. After the upgrade is complete, the system must be rebooted. To cause the reboot to occur automatically, select **Reboot**. Otherwise, the system can be rebooted manually after the upgrade is completed.
5. Click **Download**.

   The software download occurs. After the download is complete, the Start the Upgrade button appears.

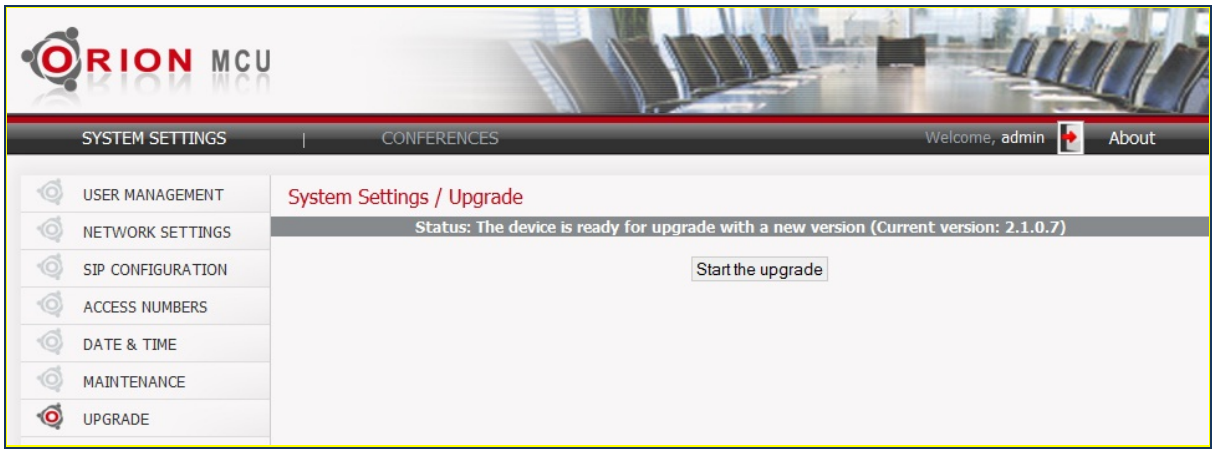
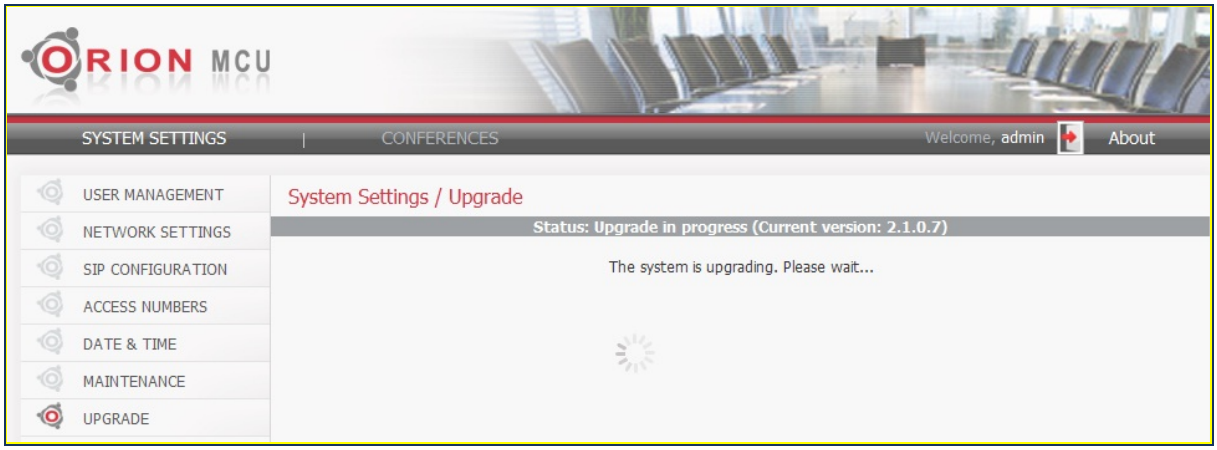


Figure 6-22- Starting the upgrade process

6. Click **Start the Upgrade**. -

   The upgrade occurs.



6-23- Upgrade occurring

7. Did you select the Reboot option before the software download?
   - If YES, then the system reboots automatically.
   - If NO, then click the **Reboot** button which appears after the upgrade is complete.

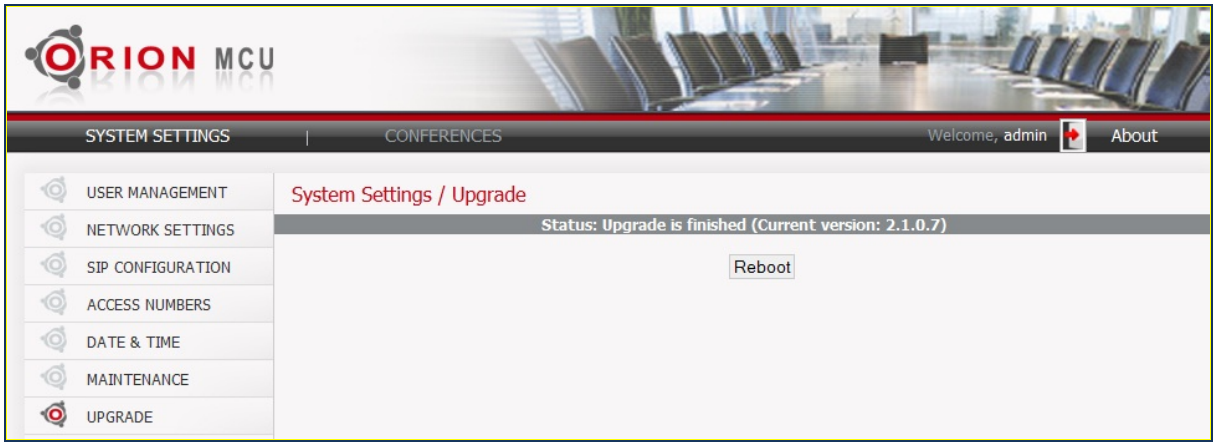


Figure 6-24- Reboot confirmation

7. Conferences

After system parameters have been provisioned, conferences can be set up.

7.1 Summary

Select **Conferences > Summary** to view the list of the existing active conferences:

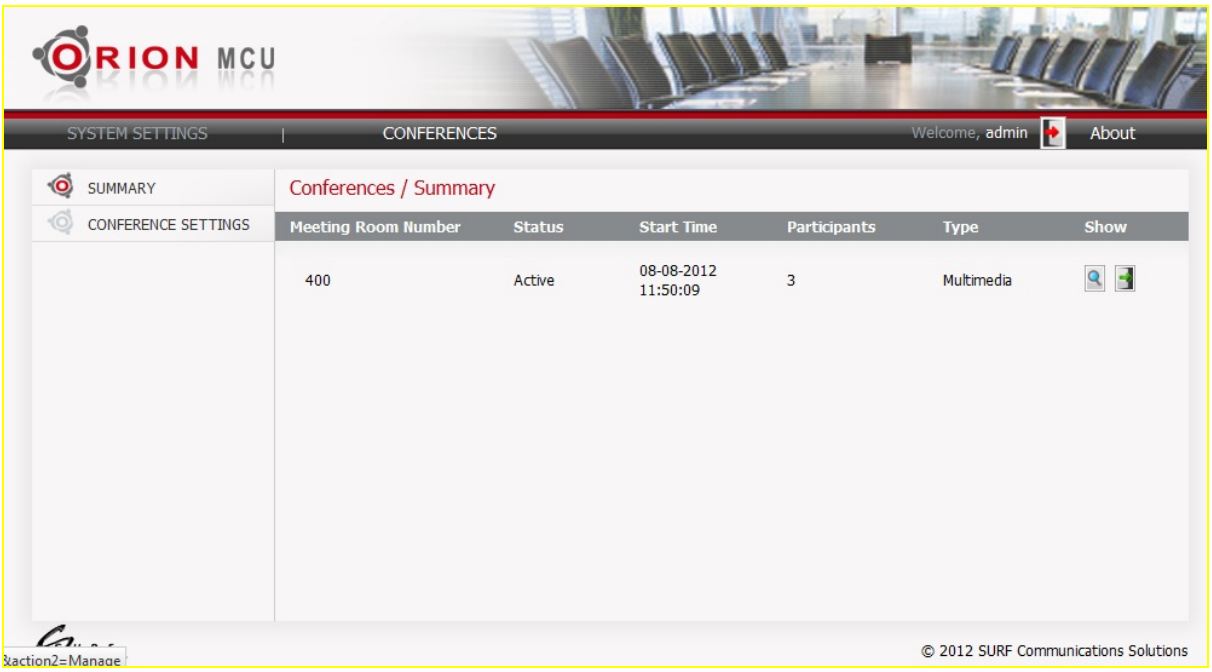


Figure 7-1- List of existing conferences

To see the details of a conference:

- Click **View** .

  In the following example, the details of conference number 24 are displayed. Details include conference state, conference type, and a list of participants, including details such as telephone number, login time and role in the conference.

Figure 7-2- Conference details

Click **Leader Dashboard** , to open the Leader Dashboard and manage a conference.

7.2 Conference Settings

The parameters of an existing conference can be viewed, and new conferences can be created.

7.2.1 Opening the Conference Settings Window

To open the Conference Settings window:

- Select **Conferences > Conference Settings**.

  The list of the existing conferences is displayed :

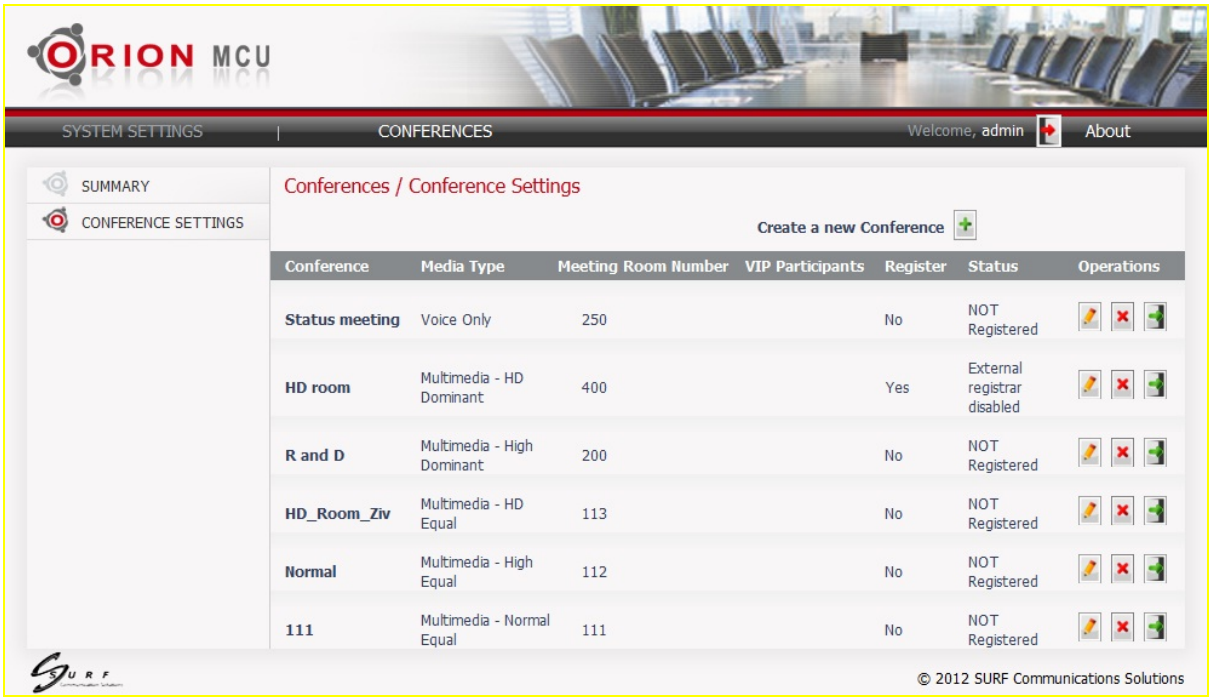


Figure 7-3- Conference management screen

Note: The three parameters displayed in the **Media Type** column are as follows:

- Multimedia/Voice
- Video Quality: Normal: Voice Only, CIF (352X288) / High: VGA (640x480) / HD: (1280x720)
- Dominant Based/Equal Presence

7.2.2 Creating a Conference

To create a new conference:

1. Click **Create a new Conference** .

   The Create a new Conference window opens.

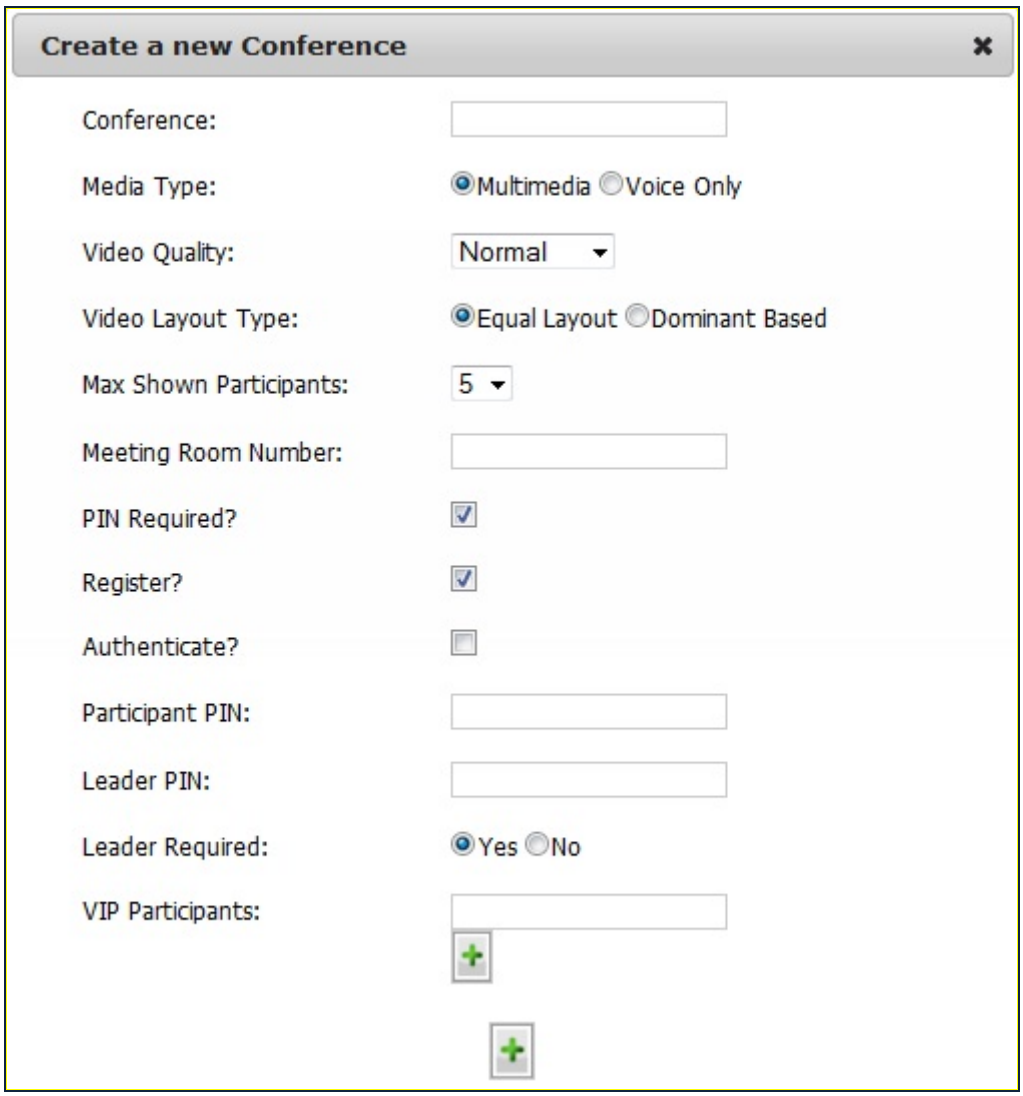


Figure 7-4- New conference details

2. Select conference parameters as described in Conferencing Parameters.

3. Click **Save** , to save the entered information.

7.2.3 Other Conference Actions

You can edit conferences, delete conferences, and open the Leader Dashboard to manage a conference from the Operations column of the Conference Settings window.

To edit a conference:

- Click **Edit** . Then edit conference parameters as described in Conferencing Parameters.

To delete a conference:

- Click **Delete** .

To manage a conference:

- Click **Leader Dashboard** , to open the Leader Dashboard. See Leader Dashboard.

7.3 Conferencing Parameters

Conferencing parameters are as follows:

Parameter	Values	Remarks
Conference Name	String	The nickname of the conference
Media Type	Multimedia Voice Only	The type of conference to be defined
Video Quality	Normal High HD Voice Only	The video quality of the conference Normal: CIF (352X288), High: VGA (640x480),HD: (1280x720), and Voice Only
Video Layout Type	Equal Layout Dominant Based	The type of the video conference layout.
Max Shown Participants	Number	Up to 16, for equal based layouts, up to 8 for dominant based.
Meeting Room Number	Number	The meeting room (conference) can be accessed by direct dialing, if it is registered.
PIN Required?	Yes/No	If positive, the participant is required to enter PIN number to log into the conference.
Register?	Yes/No	If positive then the conference is registered with the external registrar.
Authenticate?	Yes/No	If positive then the conference is registered with authentication.
Username	String	If authentication chosen, a username needs to be entered.
Password	String	If authentication chosen, password needs to be entered.
Participant PIN	Number	The participant PIN for logging into the conference
Leader PIN	Number	The conference leader PIN (should be different from the participant PIN)
Leader Required	Yes/No	Defines if a conference can commence prior to Leader log-in

Parameter	Values	Remarks
		or to put all other participants on hold until leader log-in.
VIP Participants	List of numbers	Participants' phone numbers or SIP URIs who can join the conference without conference PIN codes.

Table 7-1: Conferencing parameters

7.4 Dialing Options

In order to join a conference from video conferencing equipment or a soft client, the following possible dialing options can be used:

- ***"SIP-URI/Tel-URI"*** – A registered SIP-URI or telephone number of the conferencing system.
- ***"SIP-URI/Tel-URI@PBX-IP-address/@Orion-IP-address"*** – A non-registered SIP-URI or telephone number of the conferencing system, combined with the PBX (if used) or the Orion-MCU IP address.
- ***"conference number"*** – The (registered) conference number that the participant wants to join. If the "PIN required" parameter has been set to "no", participants join the conference directly. Otherwise the IVR/IVVR asks for a PIN number.
- ***"conference number@OrionIP address"*** – Used to join an unregistered conference.
- "SIP-URI/Tel-URI*conf number*pin number@ Orion IP address" – Used for direct calling, without IVR.

The following is an example of a few dialing options:

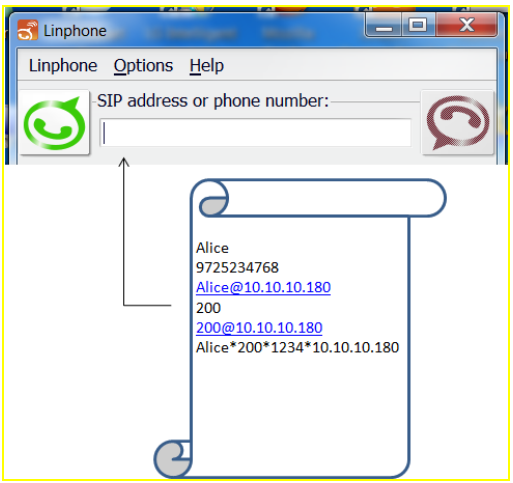


Figure 7-5- Dialing Options

A conference can be registered to the proxy server or PBX. If the conference is registered, it is sufficient to join the conference by entering only the conference number. Otherwise, the conference number@Orion-MCU IP-address should be entered.

8. Leader Dashboard

The Leader Dashboard provides the following capabilities:

- Inviting participants to conference.
- Modifying conference parameters.
- Disconnecting participants from a conference.

8.1 Leader Login

The leader logs into the Leader Dashboard by using the conference number as username and the leader PIN code as password, as shown the following figure:

Figure 8-1- Leader login

8.2 Main Screen

On the main screen of the Leader Dashboard, the meeting information, conference participants list and the parameters for each participant are displayed:

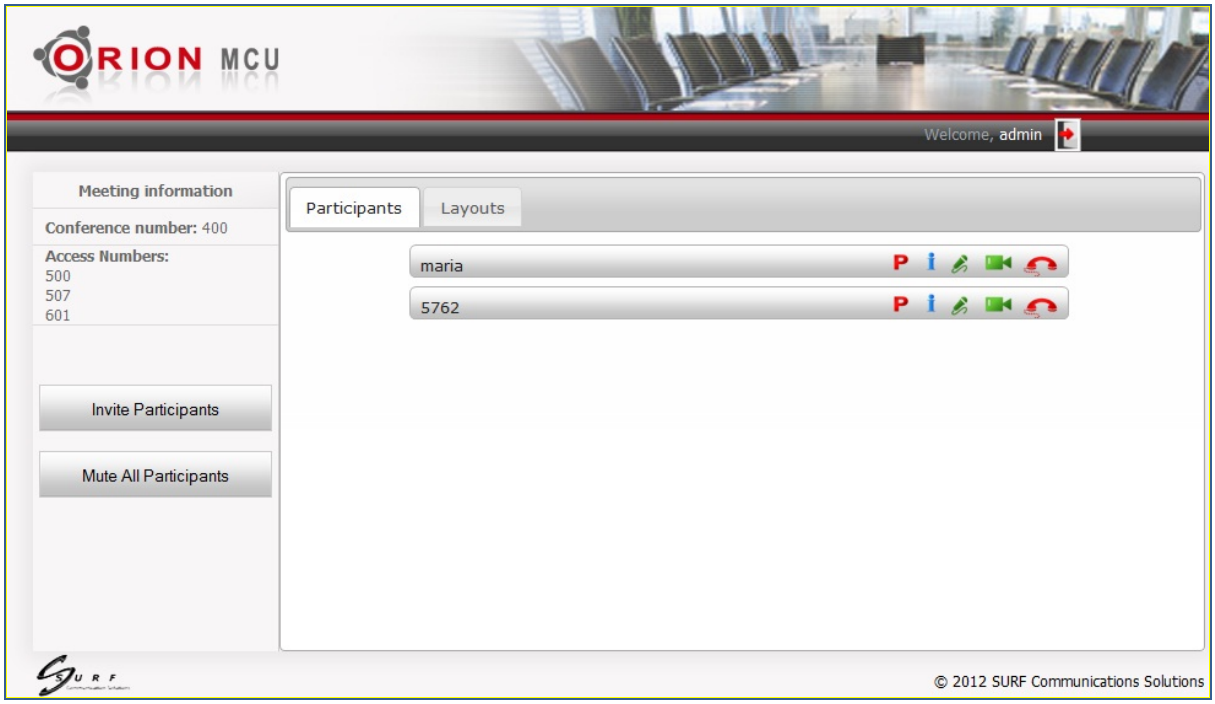


Figure 8-2- Leader Dashboard main screen

The icons displayed on the Leader Dashboard are as follows:

Dominant participant	**Participant (not Dominant)**		
Call statistics (Figure 8-3)			
Dominant Voice enabled	**Participant Voice enabled**	**Participant Voice muted**	**Video only conference**
Visible, dominant participant	**Visible participant**	**Invisible participant**	**Voice only participant**
Remove participant			

Table 8-1: Leader dashboard icons

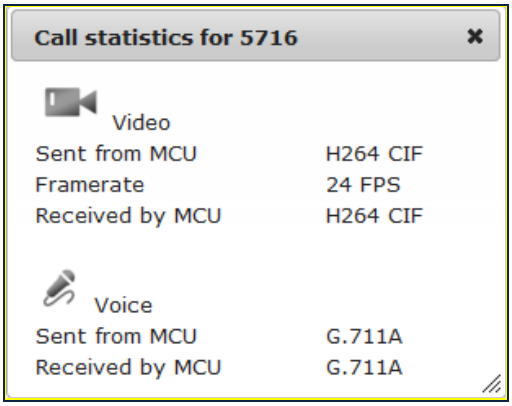


Figure 8-3- Call statistics

8.3 Leader's Capabilities

The leader can take the following actions:

- Invite a participant to join the conference
- Modify the status of the participant from dominant to non dominant and vice versa
- Make a participant visible/invisible
- Obtain call statistics
- Mute/Unmute all participants
- Mute/Unmute a participant
- Remove a participant from the conference
- Modify the conference layout mode

8.4 Inviting Participants

To invite participants to join a conference:

1. Click Invite Participants.

   The Invite Participants window opens:

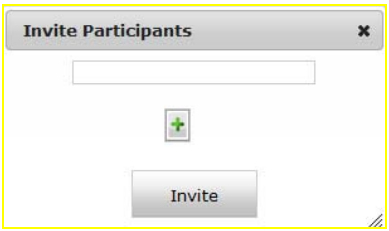
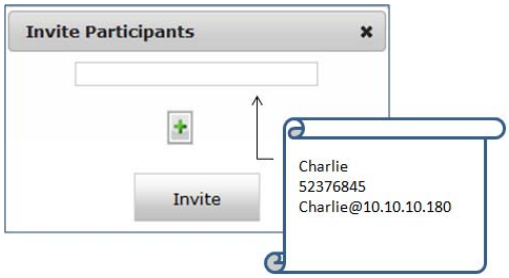


Figure 8-4- Inviting participants

2. Enter one of the following:
   - Name (participant's SIP registration value to the SIP proxy) – If the participant is a registered participant.

- name@PBX-IP-Address - If the participant is not a registered participant. For example:



3. Click to add more participants and then click **Invite**.

   Click to cancel the invitation.

8.5 Modifying the Conference Layout Mode

To set the conference layout mode, click the **Layout** tab on the main leader dashboard. The following screen opens, showing the current and the possible layouts:

Figure 8-5- Conference layout mode

One of two layouts can be chosen:

- Dominant* based: The dominant speaker's image is larger than the other participants' images.
- Equal Presence: All the images are displayed equally.

* The dominant speaker is automatically defined by energetic voice detection.

The red border shows the chosen layout. Click **Apply Chosen Layout to Conference** to select a layout.

9. Serial Connectivity

If there is no communication with the system for any reason, the Orion-MCU™ can be accessed by the serial I/O port for a basic troubleshooting. Follow these steps to enable serial communication.

Step 1: Physical Connectivity

Connect the serial port of your laptop to the Orion-MCU™ serial port. If no serial I/O port is available on your computer, use a USB adaptor.

Step 2: Login

Use any Telnet software, for example "PuTTy", to reach the login prompt of the system.

The connection speed needs to be set to 115200 and the Remote Character Set needs to be set to UTF-8.

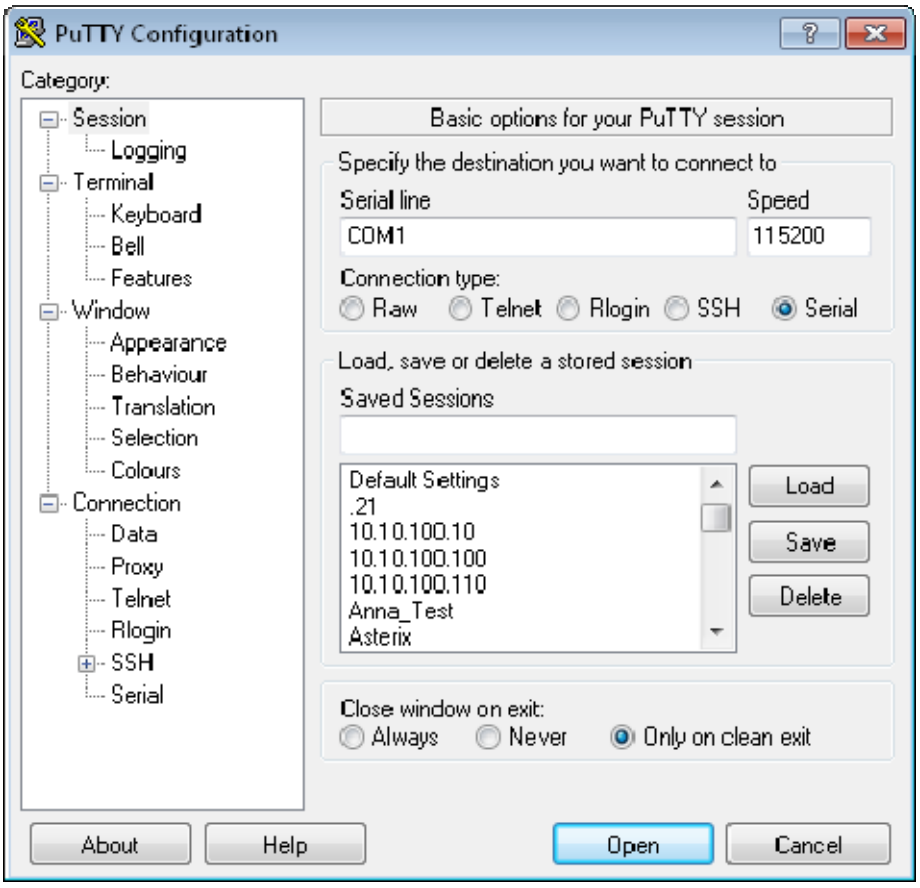


Figure 9-1- Putty Settings 1

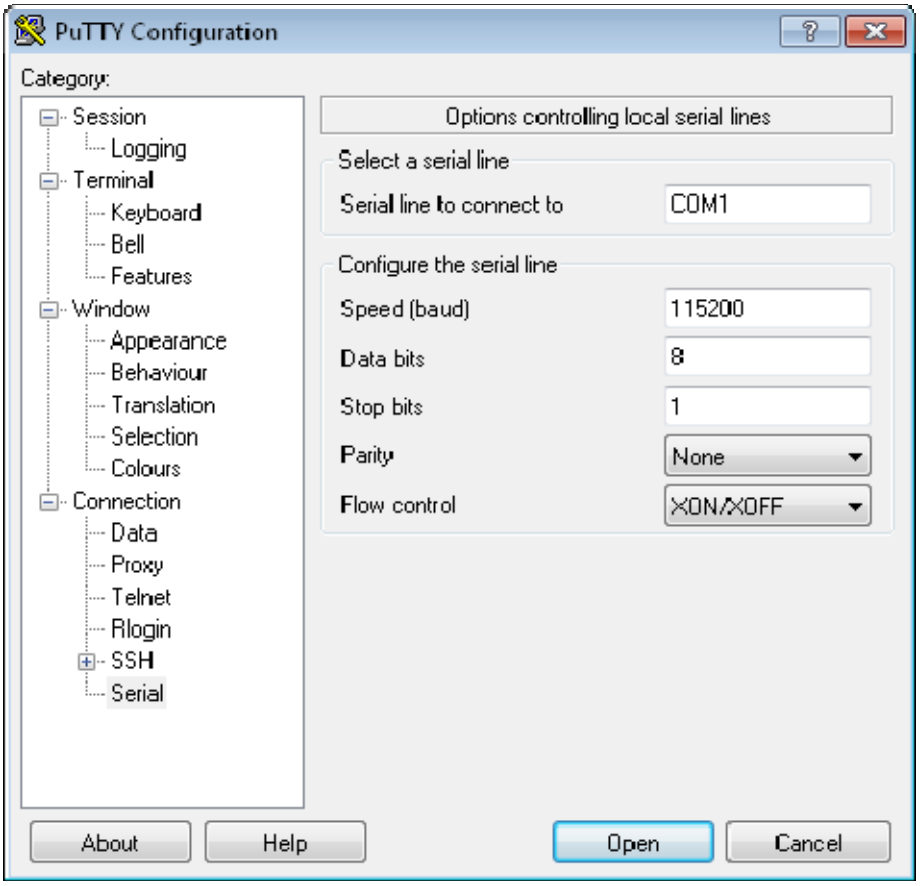


Figure 9-2- Putty Settings 2

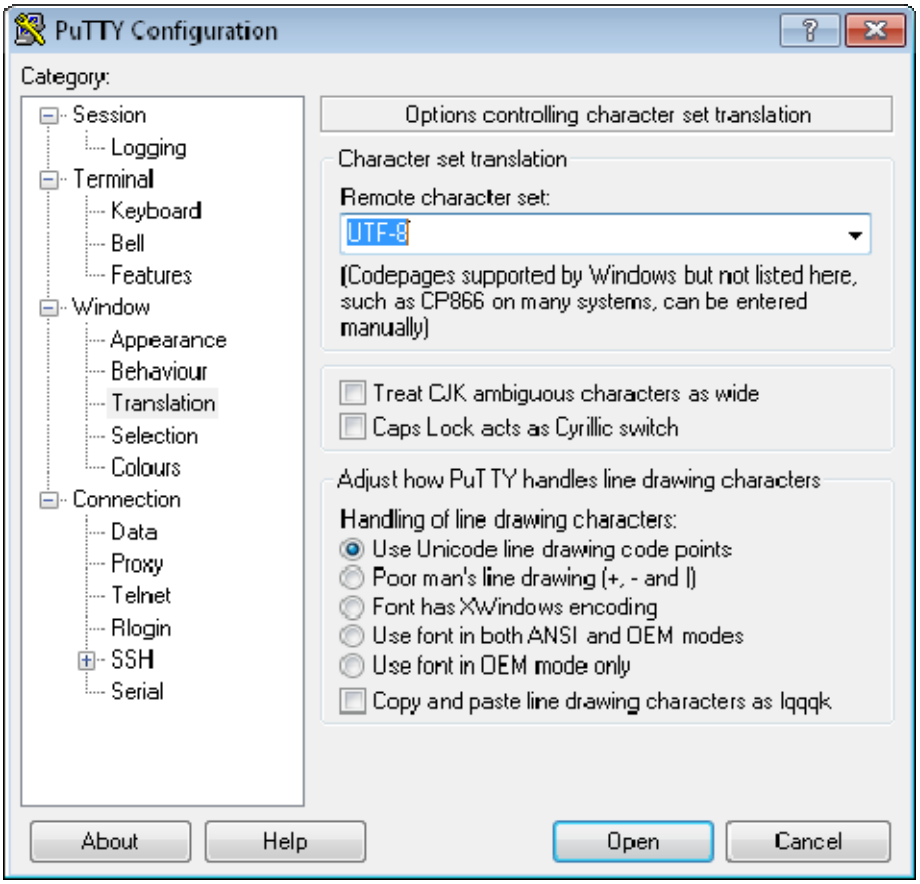


Figure 9-3- Putty Settings 3

Step 3: Emergency menu

Enter the default user name and password (admin, admin) to view the emergency menu. Use the arrow keys and <Enter> to make your selection from the following options:

1. Show the IP address of the system
2. Set a default IP address
3. Reset the password
4. Reboot the system
5. Logout

10. Appendix-A: Precautions & Safety

10.1 Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In a single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extracting a component from the rack.
- Extract only one component at a time - extracting two or more simultaneously may cause the rack to become unstable.

10.2 Server Precautions

- Review the electrical and general safety precautions.
- Determine the placement of each component in the rack before you install the rails.
- Install the heaviest server components at the bottom of the rack first, and then work up.
- Use a regulating, uninterruptible power supply (UPS) to protect the Orion-MCU™ from power surges, voltage spikes and to keep your system operating in case of a power failure.
- To maintain proper cooling, always keep the rack's front door and all panels and components on the components closed when not servicing.

10.3 System Safety

10.3.1 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the Orion-MCU™ from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Power should always be disconnected from the system when removing or installing main system components. When disconnecting power, you should first shut down the system and then unplug the power cords.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.

- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets.

10.3.2 General Safety Precautions

Follow these rules to ensure general safety:

- Keep the area around the system clean and free of clutter.
- The system weighs approximately 10 lbs (4.5 kg).
- Place the chassis top cover and any system components that have been removed, away from the system or on a table so that they won't accidentally be stepped on.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws, after ensuring that all connections have been made.

11. Appendix-B- Rack Mounting

The box your chassis was shipped in should include four mounting screws, which you will need if you intend to install the system into a rack.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease of servicing.
- This product is for installation only in a Restricted Access Location (dedicated equipment room, service closet, etc.).

Rack Mounting Considerations

Ambient Operating Temperature: If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

Reduced Airflow: Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading: Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading: Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on over current protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground: A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

Rack Mounting Instructions

This section provides information about installing the Orion-MCU™ into a rack unit. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Installing the Chassis into a Rack:

1. Confirm that chassis includes the four mounting screws required to mount the chassis into a rack
2. Align the thru holes of the chassis with the thru holes of the rack.
3. Insert the mounting screws into the thru holes in the front of the chassis and through the thru holes in the rack

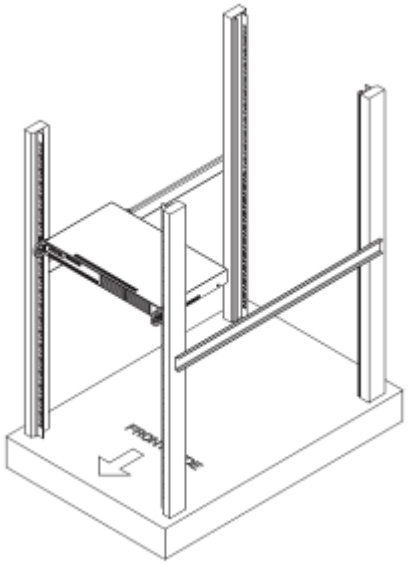


Figure 11-1- Installing Orion-MCU™ into a Rack

Installing into a Telco Rack

The compact design of the Orion-MCU™ enables installation into a Telco rack without the use of rails. The installation instructions are similar to the regular rack instructions.

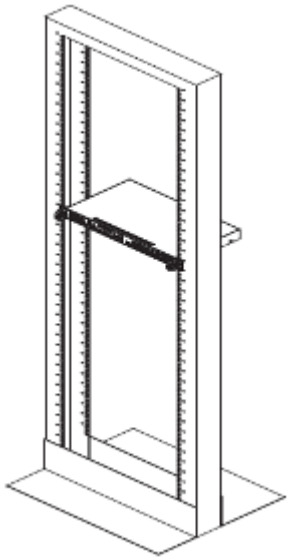


Figure 11-2- Installing Orion-MCU™ into a Telco Rack

12. Appendix C- Technical Specification

Dimensions: 9 x 7.5 in (229 x 191 mm)

Chassis: 1U Rackmountable

Weight: Gross Weight: 10 lbs. (4.5 kg.)

System Input Requirements

AC Input Voltage: 100-240 VAC (auto-range)

Rated Input Current: 3A max.

Rated Input Frequency: 50 to 60 Hz

Power Supply

Rated Output Power: 200W (Part# PWS-202-1H)

Rated Output Voltages: +3.3V (8A), +5V (8A), +12V (16A), -12V (0.5A), +5Vsb (2A)

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)

Non-operating Temperature: -40º to 70º C (-40º to 158º F)

Operating Relative Humidity: 8% to 90% (non-condensing)

Non-operating Relative Humidity: 5 to 95% (non-condensing)

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